Department of Natural Resources
Policy

Subject: **Computer Hardware Standards**

Policy Number: **01:05**

Effective Date: **May 1, 2001**

Approved: _[signature]_ **Date: 8/8/01**

I. **Purpose**
The purpose of this policy is to establish Hardware Configuration Standards and Hardware Replacement Schedule.

II. **Scope**
This policy applies to all Units within the Department of Natural Resources (DNR).

This policy applies to the acquisition of standard hardware, upgrades and/or modifications of network servers hardware (supporting such server functions as web, database, E-mail, application, file transfer protocol, domain name services), personal computers (desktop workstations, laptops), Personal Digital Assistants (PDAs / Handhelds) and peripherals to include printers and other required hardware.

This policy does not pertain to telecommunications equipment (e.g., routers, hubs, LAN/WAN gateways). This is addressed in the Department of Natural Resources "Network Design and Operation Policy".

III. **Policy** – Hardware will be procured and replaced based on the Hardware Standards and Hardware Replacement Plans as noted in this policy.

   a. **Hardware Standards** – The minimal standards for Network Servers (Table 1), Personal Computers (both Desktop and Laptops – Tables 2 and 3), PDAs (Table 4), and Peripherals (Table 5) are specified in the tables below. These standards will apply to the procurement of the hardware noted in the tables.

   b. **Hardware Replacement / Refresh Plan** – Hardware will be replaced based on a three-year rotational schedule. Therefore one-third of Network Servers and Computers will be replaced per year. The annual execution of this Replacement Plan assumes that funding has been requested and approved.

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Table 1 – Hardware Standards: Network Server

Processor	Intel≤ Pentium III 500MHz, dual Capable
Hard Drive	SCSI II, Raid Capable, Sized for Application
Memory	512 MB
Video	Minimal
Sound	Not Required
Removable Media	3.5" Floppy and CD-ROM
Network Interface Card	PCI 10/100 TX Auto Sensing RJ45 (ITS Approved)
Power Supply	Redundant Capable
UPS	Sized to System
Operating System	Windows NT, SP4 or higher pending Windows 2000 pending ITS approval
Backup	Hewlett Packard DLT tape drives, Veritas Backup Exec

c. Desktop Computers - DNR in accordance with the Department of Budget and Management (DBM), Office of Information Technology (OIT), will classify its users into one of the three technology classifications listed below.

1. Leading Edge Technology Users – DNR employees who need to be at the forefront of technology. These users include computer support personnel, geographic information systems developers/users and users performing modeling.

2. Mainstream Technology Users – DNR employees whose daily business operations require the utilization of technology, and they use: a standardized suite of applications on their desktops, such as word processing, spreadsheets or presentations; customized applications beyond the standardized suite; servers for database and decision-support; and/or department-specific applications e-mail, intranets and the Internet.

3. Conservative Technology Users - DNR employees whose daily business operations require the utilization of technology for everyday office functions and they have: a standardized suite of applications, access to file and print servers, access to some host-based legacy applications.

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Table 2 – Hardware Standards: Desktop Computers

Minimum Desktop Computer Hardware (New Procurements)			
	Leading Edge	Mainstream	Conservative
Processor	Intel≤ Pentium III 1000MHz	Intel≤ Pentium III 866MHz	Intel≤ Pentium III Celeron or Intel≤ Pentium III - 733MHz
Hard Drive	20GB – 40GB	20 GB	10 GB
Memory	128MB – 256MB	128 MB	128 MB
Video	8-64MB	8-32MB	8MB
Sound	Required	Required	Required
Removable Media	3.5" Floppy and (DVD, CD-RW or CD-ROM)	3.5" Floppy and (DVD or CD-ROM)	3.5" Floppy and CD-ROM
Network Interface Card (Mandatory)	10/100 TX RJ45 Auto Sensing	10/100 TX RJ45 Auto Sensing	10/100 TX RJ45 Auto Sensing
Modem (If needed)	56K	56K	56K
Monitor	17"-21"	17"	17"
Operating System	Windows 2000 Pro	Windows 2000 Pro	Windows 2000 Pro

Table 3 – Hardware Standards: Laptop Computers

Minimum Laptop Computer Hardware (New Procurements)		
	Mainstream	Conservative
Processor	Intel≤ Pentium III 600MHz	Intel≤ Pentium III Celeron or Intel≤ Pentium III 600MHz
Hard Drive	20 GB	10 GB
Memory	128 MB	128 MB
Video	8-32MB	8MB
Sound	Integrated Sound	Integrated Sound
Removable Media	3.5" Floppy and CD-ROM	3.5" Floppy and CD-ROM
Network Interface Card (If needed)	10/100 TX RJ45 Auto Sensing	10/100 TX RJ45 Auto Sensing
Modem	56K	56K
Operating System	Windows 2000 Pro	Windows 2000 Pro

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Table 4 – Hardware Standards: PDA

Minimum Handheld (PDA) (New Procurements)
Hardware capable of using Palm operating system 3.0 or greater

Table 5 – Hardware Standards: Peripherals

Minimum Laser Printers (New Procurements)			
	Network Laser	Network Color Laser	Individual Printer
Pages Per Minute	17 Pages Per Minute	16 Pages Per Minute Black 4 Pages Per Minute Color	8 Pages Per Minute
Min DPI	1200 Dots Per Inch	600 Dots Per Inch Black and Color	600 Dots Per Inch
Memory	8 MB, upgradeable	64 MB, upgradeable	2 MB, upgradeable
Network Interface	10/100 Ethernet	10/100 Ethernet	N/A

d. Needs Requirement Discussion – The Department will replace desktop computers on a three-year replacement schedule for the following reasons:

1. To allow the Department to keep its technology current,
2. To transition to new technology as it becomes practical,
3. To allow a more consistent budget request from year to year,
4. To run current versions of software,
5. To adopt the industry standard - three-year rotation for computers,
6. To avoid reduced equipment reliability after three years,
7. To achieve a more consistent total cost of computing, and,
8. To reduce the cost for a service contract on PC's, thereby reducing the total cost of ownership of PC's.

e. **Hardware Replacement / Refresh Plan-** Annual execution of this plan will be contingent upon having the necessary funding approved as part of the Information Technology Service (ITS) Budget.

1. **Network Servers** – One-third of the Network Servers will be replaced each year.

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2. **Desktop Computers** - The DNR will replace desktop computers at the departmental level. Units will replace one-third of their desktop computers every year. In accordance with DBM, OIT, this plan is based on a technology refresh cascade, whereby equipment is transferred to a less demanding user. To minimize the work for redeploying equipment, it is recommended that equipment will be redeployed once from its current level to the lowest level user.

3. **Peripherals** – Peripherals (printers, scanners, etc.) will be assessed and funded by the Unit as needed for replacement.

IV.   **Guidelines - Desktop Replacement Plan**

a. Each year, the Information Technology Service will set a minimum hardware configuration standard and evaluate the inventory.

b. Funding will be included in the Information Technology Service budget to acquire the PC's scheduled for replacement.

c. One third of the PC's in DNR will be replaced. Unit will be responsible for submitting a replacement plan by July 1, and the schedule to replace PC's in DNR will be prepared prior to July 31.

d. The Information Technology Service will work with each Unit to implement the refresh schedule. The schedule will also indicate where cascading of desktops will take place. While cascading will be kept to a minimum there are circumstances where cascading is the better option.

e. On average, each Unit will replace 1/3 of their PC's. If a Unit wishes to deviate from this procedure they will submit a three-year plan detailing their replacement schedule and demonstrate how they will conform to the minimum standards set by Information Technology Service. Each Unit shall have the option to supplement these funds in order to enhance the PCs or accelerate the schedule.

f. ITS will replace a users primary PC. A user's secondary PC, such as a laptop, will not be included in the replacement schedule. PC's assigned to functions will be replaced if identified and justified by the DP Contact and Unit Director.

g. At the direction of Information Technology Service, all replaced PC's shall be disposed or reallocated to units which in turn will replace and dispose of the

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reallocated PC in addition to their 1/3. Units are responsible for disposing of equipment in accordance with State and Department procedures. This process will help Units to meet minimum standards faster than the designated three-year rotation.

h. Annually Defined minimum hardware configuration standards
   - **Network** - FY 2002 Minimum In-service- Windows NT, Pentium II 300 MHz, 128 MB Memory, 8 GB HD
   - **Standalone** - FY 2002 Minimum In-service- Windows 98, Pentium II 300 MHz, 128 MB Memory, 8 GB HD
   - **FY 2002 Minimum Purchase** - Windows 2000 Pro, Pentium III Celeron 733 MHz, 128 MB Memory, 10 GB

i. Annually Defined operating system standards
   - FY 2002 New PC – Windows 2000 Pro
   - All equipment with Windows 95 should be replaced or have the OS upgraded to Windows 2000 Pro.

V.   Responsibilities

a. The Technical Support Manager of the Information Technology Service will implement the department wide component of this policy.

b. The Chief of Information Technology will review this policy annually.

c. Unit DP Contacts will implement the policy within their Unit.

References
Gartner Group – PC Life Cycle: How Long Should I Keep My PCs?
Gartner Group – PC Desktop Hardware Beyond Three Years: Fix or Replace?
Gartner Group – Still Cascading PCs?
State of Maryland, Office of Information Technology, Hardware Standards & Technology Refresh Policy

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